IN THE CLAIMS

Claims 1-138 are presented below:

Claims 1-111 (canceled).

Claim 112 (Currently Amended): A method of forming a barrier metal film formed of a nitride film including tungsten by thermal CVD, comprising:

(a) positioning a substrate in a processing vessel;

~~evacuating the processing vessel;~~

(b) forming a WSi film ~~containing tungsten~~ on one side of the substrate by supplying a process gas including WF_6 gas and at least one of SiH_4 gas, SiH_2Cl_2 gas and Si_2H_6 gas into the processing vessel while a processing pressure in the processing vessel is maintained;

(c) shutting off the supplying of the process gas into the processing vessel;

(d) completely removing the process gas from the processing vessel by supplying a purging gas into the processing vessel after the shutting off the supplying~~, while evacuating the processing vessel~~; and

(e) nitriding the WSi film ~~containing tungsten~~ by supplying NH_3 gas or MMH gas into the processing vessel from which the process gas has been removed, to form a WSixNy film.

Claim 113 (canceled).

Claim 114 (Currently Amended): The method according to Claim 112, wherein the nitriding of the WSi film is performed in another processing vessel.

Claim 115 (Canceled).

Claim 116 (Currently Amended): The method according to Claim 112, wherein the WSi film ~~containing tungsten~~ is formed at a temperature of about 300 to 450°C and on a pressure of about 0.5 to 80 Torr.

Claim 117 (Canceled).

Claim 118 (Currently Amended): The method according to Claim ~~113~~ 112, wherein the nitriding of the WSi film is performed by ~~generating plasma~~ under the following process conditions:

temperature: about 300-450°C, and

pressure: about [[0.1-5]] 0.5-10 Torr.

Claims 119-120 (Canceled).

Claim 121 (Currently Amended): A method of forming a barrier metal film ~~formed of a nitride film including tungsten~~ by thermal CVD, comprising:

(a) positioning a substrate in a processing vessel;

~~evacuating the processing vessel;~~

(b) forming a film containing tungsten on one side of the substrate by supplying a process gas including a gas containing tungsten and a gas containing hydrogen into the processing vessel, while a processing pressure in the processing vessel is maintained;

(c) shutting off the supplying of the process gas into the processing vessel;

(d) ~~completely~~ removing the process gas from the processing vessel by supplying an inert gas as a purging gas into the processing vessel after the shutting off the supplying, ~~while evacuating the processing vessel~~; and

(e) nitriding the film containing tungsten by supplying NH_3 gas or MMH gas into the processing vessel from which the process gas has been removed, to form a nitrided film.

Claim 122 (Previously Presented): The method according to Claim 121, wherein the nitriding of the film is performed by generating plasma.

Claim 123 (Canceled).

Claim 124 (Previously Presented): The method according to Claim 121, wherein the gas containing hydrogen includes at least one of H_2 gas, SiH_4 gas, Si_2H_6 gas, and SiH_2Cl_2 gas.

Claim 125 (Canceled).

Claim 126 (Currently Amended): A method of forming a barrier metal film ~~formed of a nitride film including tungsten~~ by thermal CVD comprising:

(a) positioning a substrate in a processing vessel;

~~evacuating the processing vessel;~~

(b) forming a W film ~~containing tungsten~~ on one side of the substrate by supplying a process gas including WF_6 gas and ~~SiH_4, gas or~~ H_2 gas into the processing vessel while a processing pressure in the processing vessel is maintained;

(c) shutting off the supplying of the process gas into the processing vessel;

(d) ~~completely~~ removing the process gas from the processing vessel by supplying an inert gas as a purging gas into the processing vessel, ~~while evacuating the processing vessel~~ after the shutting off the supplying; and

(e) nitriding the W film ~~containing tungsten~~ by supplying a gas containing NH_3 gas ~~and forming a plasma of the gas containing NH_3 gas~~ or MMH gas into the processing vessel from which the process gas has been removed, to form a WNx film.

Claim 127 (Canceled).

Claim 128 (Previously Presented): The method according to Claim 126, wherein the film containing tungsten is formed at a temperature of about 300 to 450°C.

Claims 129-130 (Canceled).

Claim 131 (Currently Amended): A method of forming a barrier metal film ~~formed of a nitride film including metal~~ by thermal CVD, comprising:

(a) positioning a substrate in a processing vessel;

~~evacuating the processing vessel;~~

(b) forming a film containing metal on one side of the substrate by supplying a process gas including a gas containing metal and a gas containing hydrogen into the processing vessel, while a processing pressure in the processing vessel is maintained by using plasma-less thermal CVD method;

(c) shutting off the supplying of the process gas into the processing vessel;

(c) ~~completely~~ removing the process gas from the processing vessel by supplying an inert gas as a purging gas into the processing vessel, after the shutting off the supplying ~~while evacuating the processing vessel~~; and

(e) nitriding the film containing metal by supplying NH_3 gas into the processing vessel from which the process gas has been removed to form a nitrided film including metal.

Claim 132 (Canceled).

Claim 133 (Currently Amended): The method according to Claim 131, wherein the nitriding of the film containing metal is performed in another processing vessel.

Claim 134 (Previously Presented): The method according to Claim 131, wherein said nitriding comprises supplying at least one of MMH and N_2.

Claim 135 (Previously Presented): The method according to Claim 131, wherein the film containing metal is formed of a metal film or metal-silicide film.

Claim 136 (Currently Amended): The method according to Claim 126, wherein the W film ~~containing tungsten is made of W or WSix~~ is formed at a temperature of about 300 to 450°C.

Claim 137 (Currently Amended): The method according to Claim 126, wherein the nitride ~~film containing tungsten is made of WX_x or WSixNy~~ of the WSi film is performed by using MMH gas under the following process conditions:

temperature: about 300-450°C, and

pressure: about 0.5-10 Torr.

Claim 138 (New): The method according to Claim 126, wherein the W film is formed on a pressure of about 1 to 80 Torr.

IN THE SPECIFICATION

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